

On some Foraminifera of Tithonian Age from the Stramberg Limestone of Nesselendorf. By FREDERICK CHAPMAN, A.L.S., F.R.M.S.

[Read 1st March, 1900.]

(PLATE 5.)

DURING the past year or so I have been favoured by Dr. M. Remeš, of Olmütz, with some specimens of Foraminifera and a sample of foraminiferal material from the marl formed by the weathering of the Red Limestone of Nesselendorf.

Dr. Perner has already published a paper on Tithonian Foraminifera from the Stramberg Limestone\*, in which he describes three species from the red marly limestone, namely, *Bulimina variabilis*, d'Orbigny, *Cristellaria varians*, Bornemann, and *C. rotulata* (Lam.). Beyond this record we have no information of the Foraminifera from beds of this particular age. Consequently the following small series is of exceptional interest.

## FORAMINIFERA.

### Family LITUOLIDÆ.

#### Subfamily LITUOLINÆ.

#### HAPLOPHRAGMIUM, *Reuss* [1860].

HAPLOPHRAGMIUM AGGLUTINANS (*d'Orbigny*). (Pl. 5. fig. 1.)

*Spirulina agglutinans*, d'Orbigny, 1846, *Foram. Foss. Vienne*, p. 137, pl. vii. figs. 10-12.

The specimen before us is somewhat irregular in growth, but the chief characters of the test resemble those of the above species.

Dating from the Lower Carboniferous rocks, this species ranges upwards in fossiliferous strata to the present day. It has also occurred in the mixed faunas from the Aptian beds of Surrey (*Chapman*).

One specimen from the Red Limestone of Nesselendorf.

\* *Bull. Internat. Acad. Sc. Bohême*, 1898, pp. (1-3), pl. i.

HAPLOPHRAGMIUM NEOCOMIANUM, *Chapman*. (Pl. 5. fig. 2.)

*Haplophragmium neocomianum*, Chapman, 1894, Quart. Journ. Geol. Soc. vol. 1. p. 695, pl. xxxiv. figs. 2 a, b.

This species was originally described from the Aptian beds of Surrey, where it was fairly numerous. The present specimen very closely resembles the original figure.

One specimen from the Red Limestone of Nesselsdorf.

#### Subfamily TROCHAMMININÆ.

##### AMMODISCUS, *Reuss* [1861].

AMMODISCUS INCERTUS (*d'Orbigny*). (Pl. 5. figs. 3 & 4.)

*Operculina incertus*, d'Orbigny, 1839, Foram. Cuba, p. 71, pl. vi. figs. 16 & 17.

*Ammotiscus incertus* (d'Orb.), Wisniowski, 1890, Pamietnik Akad. Umiejet Krakow, vol. xvii. p. 190, pl. viii. (i.) figs. 11 a, b.

This well-known and variable species is numerous in the present series. The two specimens here figured apparently belong to the megalospheric and microspheric forms respectively.

Common in the Red Limestone of Nesselsdorf.

#### Subfamily ENDOTHYRINÆ.

##### INVOLUTINA, *Terquem* [1862].

INVOLUTINA REMESIANA, sp. nov. (Pl. 5. figs. 5 a-c.)

Test conical, depressed, consisting of a simple coiled tube of about five whorls, the sutures distinct. The inferior surface slightly convex and covered with papillæ of exogenous shell-growth, excepting the last whorl, which is marked on the periphery with sharp furrows at right angles to the edge. The test is finely perforate on the inner parts of the tubes and calcareo-arenaceous on the outer. The aperture opens on the inferior side of the test. Diameter  $\frac{1}{27}$  inch (.93 mm.); height  $\frac{1}{120}$  inch (.208 mm.).

The species *Involutina Jonesi*, Terquem & Piette\*, is in some respects similar to this form, for example in the character of the granulations, but the outline of the test is very dissimilar.

I have named this species in honour of Dr. Remeš, of Olmütz, to whom we are indebted for this interesting series of specimens.

Common in the Red Limestone of Nesselsdorf.

\* Mém. Acad. Imp. Metz, vol. xlii. 1862, p. 461, pl. vi. figs. 22 a-c.

INVOLUTINA CONICA, *Schlumberger*. (Pl. 5. figs. 6 a, b.)

*Involutina conica*, Schlumberger, 1898, Feuille Jeunes Naturalistes, ser. 3, Ann. 28, No. 332, pp. (1, 2), figs. 1-3.

This species has been lately described from the Great Oolite between Villers-sur-Mer and Caen by M. Schlumberger.

The specimens now before us are, if anything, larger than those from France.

Frequent in the Red Limestone of Nesselsdorf.

### Family TEXTULARIIDÆ.

#### Subfamily TEXTULARIINÆ.

#### VALVULINA, *d'Orbigny* [1826].

VALVULINA CUNEIFORMIS, sp. nov. (Pl. 5. figs. 7 a, b.)

Test conical, flattened on opposite sides; septal face convex, with a valve-like aperture. Chambers numerous, narrow, and alternate in three series. Length of test  $\frac{1}{8}$  inch (.378 mm.). Measurement across the long and short axes of oral face of test  $\frac{1}{5}$  inch (.463 mm.) and  $\frac{1}{7}$  inch (.357 mm.) respectively.

This species is somewhat like *Textularia conica*, *d'Orbigny*\*, in its general shape. It differs, however, in the numerical arrangement of the chambers; the aperture also is characteristic of *Valvulina*.

Another form which *V. cuneiformis* resembles is *Valvulina palæotrochus*, var. *compressa*, Brady†, from the Carboniferous formation, but the latter is strongly concave on the apertural face.

Frequent from the Red Limestone of Nesselsdorf.

### Family LAGENIDÆ.

#### Subfamily NODOSARIINÆ.

#### LINGULINA, *d'Orbigny* [1826].

LINGULINA NODOSARIA, *Reuss*. (Pl. 5. figs. 8 a, b.)

*Lingulina nodosaria*, Reuss, 1862, Sitzungsab. Ak. Wiss. Wien, vol. xlvi. p. 59, pl. v. figs. 12 a, b.

The specimen here figured consists of two chambers only, and

\* Foram. Cuba, 1839, p. 143, pl. i. figs. 19 & 20.

† Carboniferous Foram. (Pal. Soc.), vol. xxx. 1876, p. 85, pl. iv. figs. 5 a, b.

is probably an immature example. This species has been found in the Aptian and Albian of Germany, France, and England.

One specimen from the Red Limestone of Nesselsdorf.

LINGULINA OVALIS, *Schwager*. (Pl. 5. figs. 9 a, b.)

*Lingulina ovalis*, Schwager, 1865, Jahresh. Ver. vaterl. Nat. Württ. vol. xxi. p. 116, pl. iv. figs. 21-24.

This is here represented by a fragmentary example. It consists of three chambers, flattened and ovate, and more nearly resembles Schwager's figures than others described from similar deposits. Schwager obtained his specimens from the Lower Oxfordian of Grubingen and Weissenberg.

One specimen from the Red Limestone of Nesselsdorf.

#### VAGINULINA, *d'Orbigny* [1826].

VAGINULINA TRUNCATA, *Reuss*. (Pl. 5. fig. 10.)

*Vaginulina truncata*, Reuss, 1862, Sitzungsab. Ak. Wiss. Wien, vol. xlvi. p. 47, pl. iii. fig. 9.

This species now has a geological range from the Tithonian to the Cenomanian.

One specimen from the Red Limestone of Nesselsdorf.

#### CRISTELLARIA, *Lamarck* [1816].

CRISTELLARIA BRONNI (*Römer*). (Pl. 5. fig. 11.)

*Planularia Bronni*, Römer, 1841, Verstein. nordd. Kreidegeb. p. 97, pl. xv. fig. 14.

This is a well-known Cretaceous species.

One specimen from the Red Limestone of Nesselsdorf.

CRISTELLARIA CALVA, *Wisniowski*. (Pl. 5. fig. 12.)

*Cristellaria calva*, Wisniowski, 1890, Pamietnik Akad. Umiejjet Krakow, vol. xvii. p. 223, pl. x. (iii.) figs. 4 a, b.

The above species was originally described from the *Ornatus*-zone of the Upper Jurassic of Poland.

One specimen from the Red Limestone of Nesselsdorf.

CRISTELLARIA GIBBA, *d'Orbigny*. (Pl. 5. fig. 13.)

*Cristellaria gibba*, d'Orbigny, 1839, Foram. Cuba, p. 63, pl. vii. figs. 20, 21.

Several more or less distorted varieties of this species occur in the series before us. The typical, elongated form is also present, one of which is figured.

Common in the Red Limestone of Nesselsdorf.

CRISTELLARIA ROTULATA (*Lamarck*). (Pl. 5. fig. 14.)

*Lenticulites rotulata*, Lamarck, 1804, Annales du Muséum, vol. v. p. 188. no. 3; Tabl. Encycl. et Méthod. pl. cccclxvi. fig. 5.

This widely distributed and very common form has already been recorded from the Stramberg limestone by Dr. Perner.

Common in the Red Limestone of Nesselsdorf.

CRISTELLARIA CULTRATA (*Montfort*). (Pl. 5. fig. 15.)

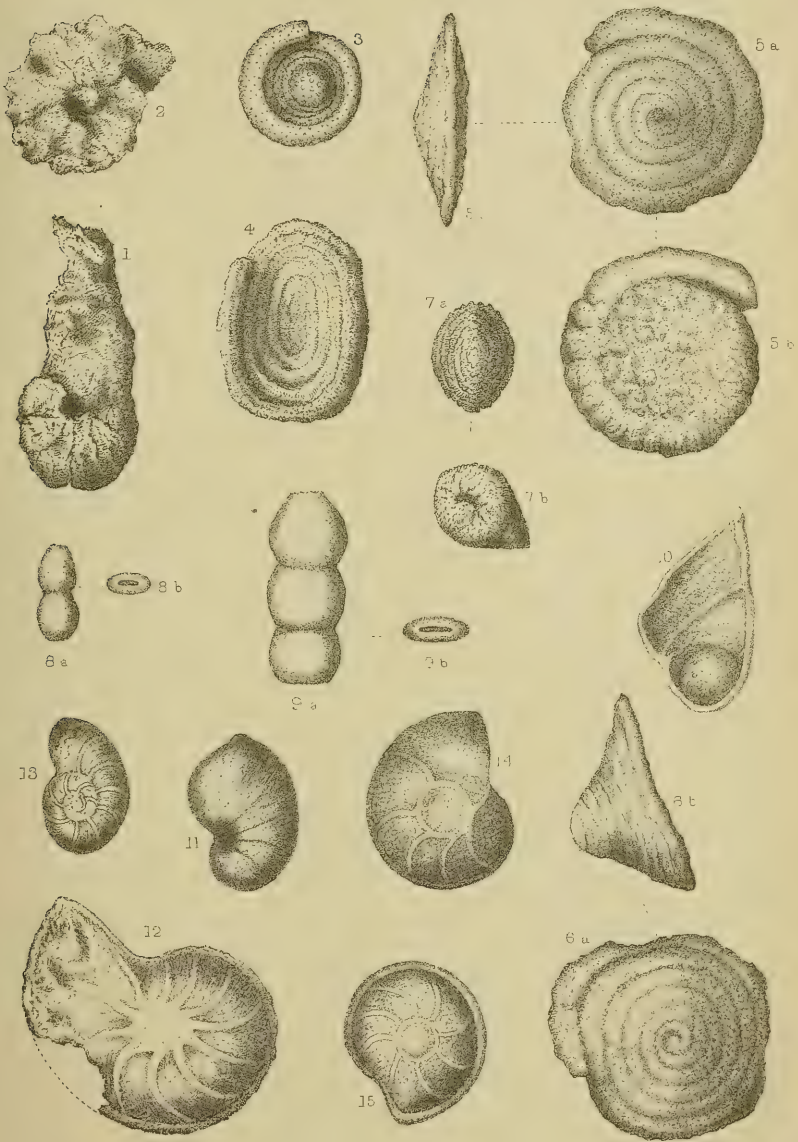
*Robulus cultratus*, Montfort, 1808, Conchyl. Systém. vol i. p. 214, 54<sup>e</sup> genre.

This species ranges from the Lias upwards.

Frequent in the Red Limestone of Nesselsdorf.

#### EXPLANATION OF PLATE 5.

- Fig. 1. *Haplophragmium agglutinans* (d'Orb.). × 30.  
 2. " *neocomianum*, Chapman. × 30.  
 3. *Ammodiscus incertus* (d'Orb.). Form A. × 30.  
 4. " " " Form B. × 30.  
 5. *Involutina Remesiana*, sp. nov.: *a*, superior aspect; *b*, inferior aspect; *c*, peripheral aspect. × 30.  
 6. *Involutina conica*, Schlumberger: *a*, superior aspect; *b*, lateral aspect. × 30.  
 7. *Valvulina cuneiformis*, sp. nov.: *a*, superior aspect; *b*, oral aspect. × 30.  
 8. *Lingulina nodosaria*, Reuss: *a*, lateral aspect; *b*, oral aspect. × 30.  
 9. " *ovalis*, Schwager: *a*, lateral aspect; *b*, oral aspect. × 30.  
 10. *Vaginulina truncata*, Reuss. × 30.  
 11. *Cristellaria Bronni* (Römer). × 30.  
 12. " *calva*, Wisniowski. × 15.  
 13. " *gibba*, d'Orb. × 30.  
 14. " *rotulata* (Lam.). × 30.  
 15. " *cultrata* (Mont.). × 30.
-



F.C. ad nat. del.  
A.R. Hammond lith.

West, Newman imp.